AP-M50

AKAI SERVICE MANUAL

FULL AUTOMATIC PLAYER

MODEL AP-M50

ABBREVIATIONS FOR SERVICE MANUAL

MODEL AP-M50

ABBREVIATIONS	EXPLANATION
DC	Direct Current
M.M	Main Motor
A.M	Arm Motor
TS	Tracking Sensor
O/S	Open/Close
L	Low (Referring to Voltage)
H	High (Referring to Voltage)
LED	Light Emitting Diode
FF	Fast Forward
FWD	ForWarD
REV	REVerse

FULL AUTOMATIC PLAYER

MODEL AP-M50

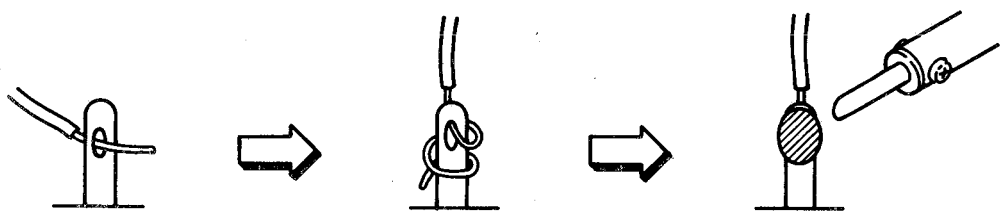
SECTION 1 SERVICE MANUAL 3
SECTION 2 PARTS LIST 11

SAFETY CHECK AFTER SERVICING

Confirm the specified insulation resistance between power cord plug prongs and externally exposed parts of the set is greater than 10 Mohms, but for equipment with external antenna terminals (tuner, receiver, etc.) and is intended for [C] or [A], specified insulation resistance should be more than 2.2 Mohms (ground terminals, microphone jacks, headphone jacks. line-in-out jacks etc.)

PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ symbol parts are critical for safety.
   Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (Insulating Barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

VOLTAGE CONVERSION

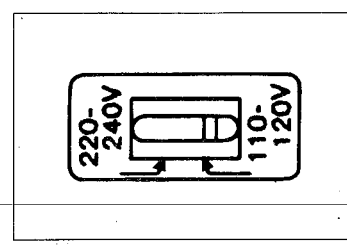
Each machine is preset at factory according to its destination, but some machines can be set to 110V/120V or 220V/240V as required.

If your machine's voltage can be converted:

Before connecting the power cord or assembling the platter turn the Voltage Selector located on the top of the cabinet with a screwdriver until the correct voltage is indicated.

Models for USA, Canada, Europe, UK and Australia are not equipped with this facility.

NOTE: Cycle conversion is unnecessary since AP-M50 use a DC motors.



SECTION 1

SERVICE MANUAL

TABLE OF CONTENTS

I. SPECIFICATIONS 4
II. DISMANTLING OF UNIT 5
III. CONTROLS 6
IV. PRINCIPAL PARTS LOCATION 7
V. ADJUSTMENT 8
1. ORDINARY MECHANICAL ADJUSTMENT 8
2. ELEVATION AND POSITION ADJUSTMENT 8
3. ARM OFFSET VOLTAGE ADJUSTMENT (Refer to Fig. 5-2) 9
4. TRACKING SENSOR SENSITIVITY ADJUSTMENT (Refer to Fig. 5-2) 9
5. MUSIC INTERVAL SENSOR SENSITIVITY ADJUSTMENT (Refer to Fig. 5-2) 9
6. SPEED ADJUSTMENT (Refer to Fig. 5-3) 9
7. LEAD-IN POSITION ADJUSTMENT (Refer to Fig. 5-4) 9
VI. PC BOARD TITLES AND IDENTIFICATION NUMBERS 10

For basic adjustments, measuring methods, and operating principles, refer to GENERAL TECHNICAL MANUAL.

I. SPECIFICATIONS

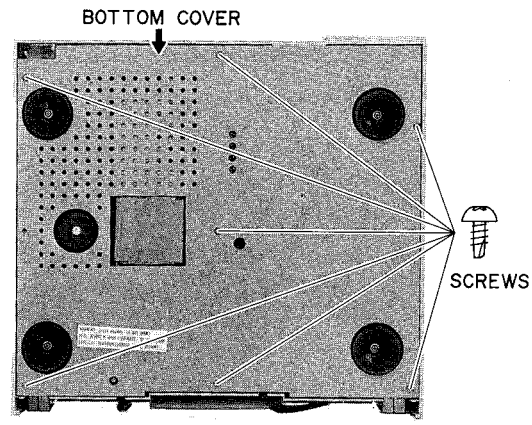
TURNTABLE (PLATTER)	Aluminum Alloy Diecast
DRIVE SYSTEM	Belt Drive
MOTOR	EG-Servo DC Motor
SPEED	33-1/3 & 45 rpm
WOW & FLUTTER	0.04% (W RMS)
RUMBLE	70dB (DIN-B)
TONE ARM	Static Balance Linear Tracking Type
EFFECTIVE ARM LENGTH	90mm
ARM LIFTER	Oil Damped
OVER HANG	0mm
CARTRIDGE	
OUTPUT VOLTAGE	2.5mV ±3dB (at 1kHz)
CHANNEL SEPARATION	More than 18dB
OPTICAL STYLUS PRESSURE	2g
POWER REQUIREMENTS	120V, 60Hz for USA & Canada 220V, 50Hz for Europe except UK 240V, 50Hz for UK & Australia 110V/120V–220V/240V, 50/60Hz Convertible for other countries
DIMENSIONS	350(W) x 90(H) x320(D) mm (13.8 x 3.5 x 12.6 inches)
WEIGHT	3.8kg (8.4 lbs)

* For improvement purposes, specifications and design are subject to change without notice.

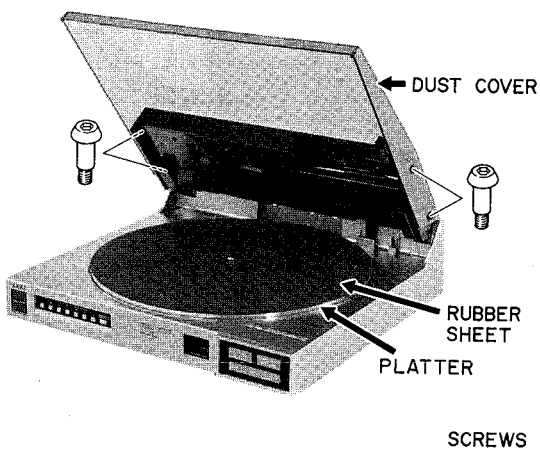
II. DISMANTLING OF UNIT

In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the photographs. Reassemble in reverse order.

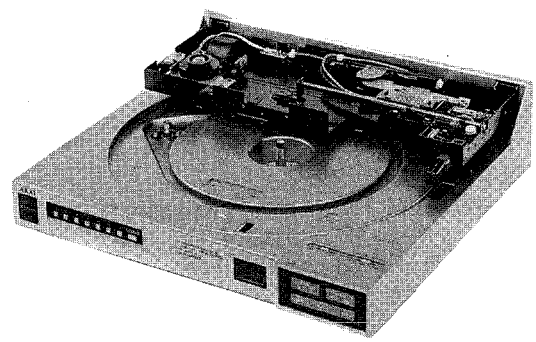
2



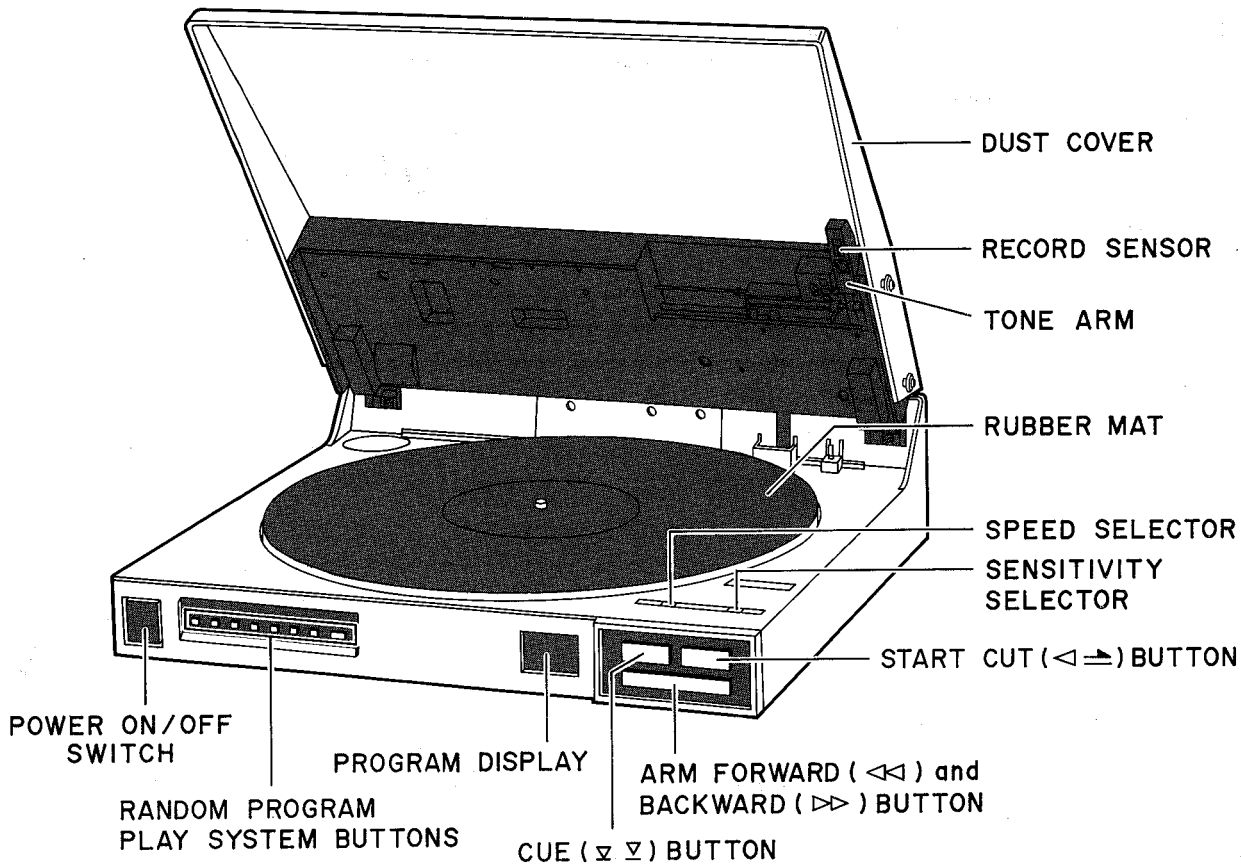
1



3



III. CONTROLS



IV. PRINCIPAL PARTS LOCATION

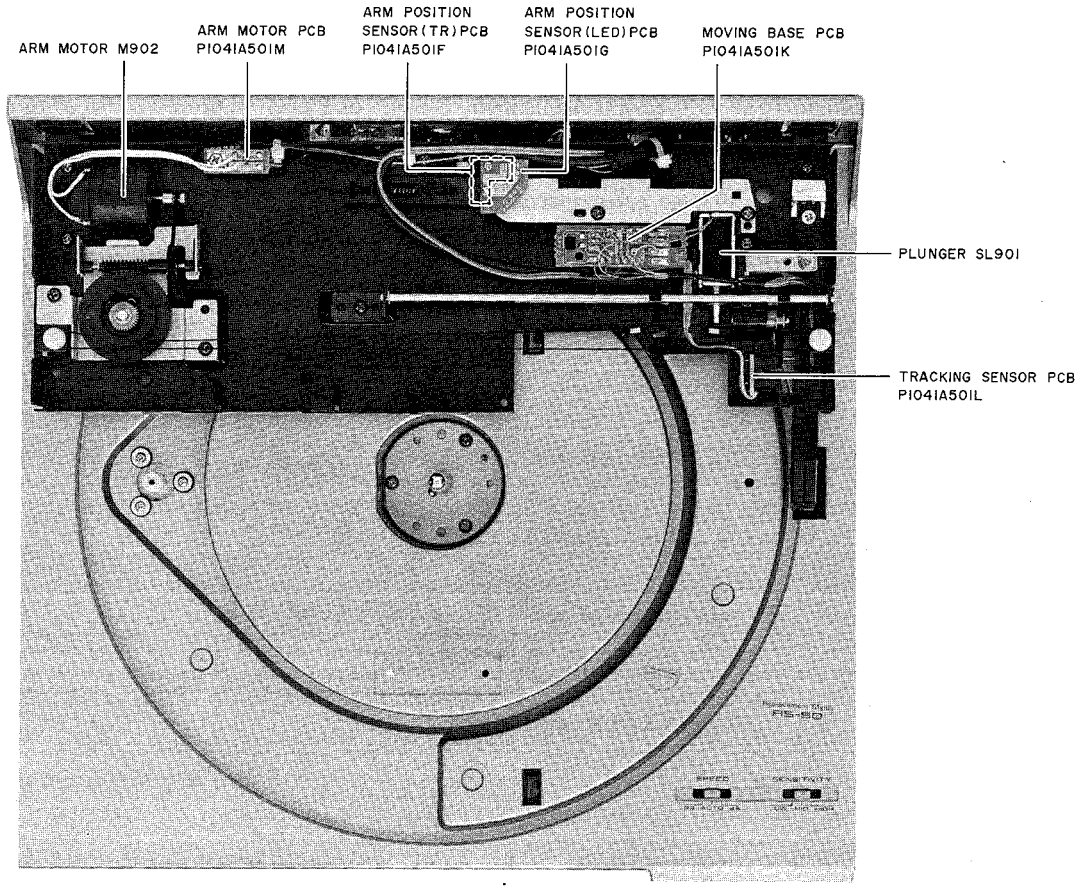


Fig. 4-1

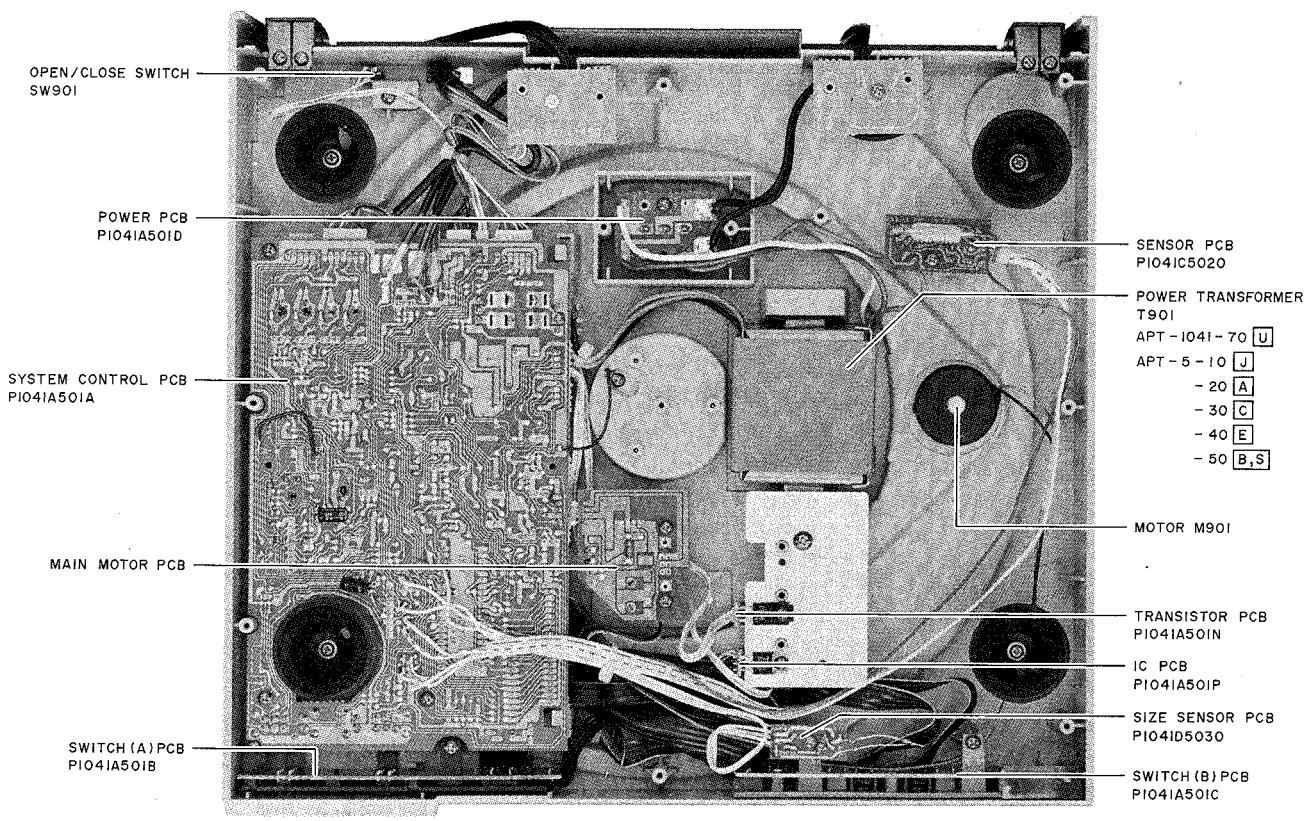


Fig. 4-2

V. ADJUSTMENT

5-1. ORDINARY MECHANICAL ADJUSTMENT

1) Ordinary Mechanical Adjustment such as Stylus Pressure, Overhang and Tone Arm Height Adjustment are not necessary since this model is equipped with a Static-Balance Linear Tracking Tone Arm.
2) Stylus Pressure is pre-adjusted to 2.0 grams at the factory, and re-adjustment is not necessary in normal conditions.

5-2. ELEVATION AND POSITION ADJUSTMENT

1) This adjustment is not necessary unless the Elevation or Elevation prop is replaced or mis-adjusted.
2) Hold the Tone Arm with the Moving Base Block and separate the Elevation Prop from the Tone Arm. Then, bring the Elevation prop close to the Tone Arm, and adjust the Elevation prop close to the Tone Arm, and adjust the Elevation Prop with a flat type screw-driver to the place where the position of the notch Ⓐ on the Elevation Prop coincides with the projection part Ⓑ on the Tone Arm as shown in Fig. 5-1.

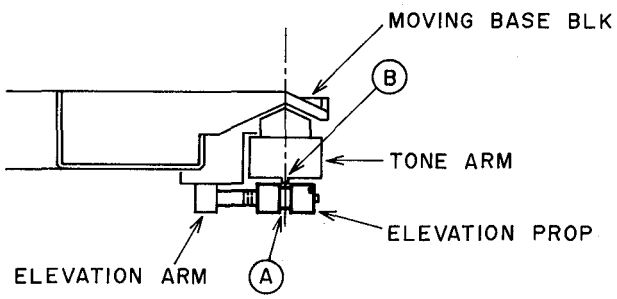


Fig. 5-1

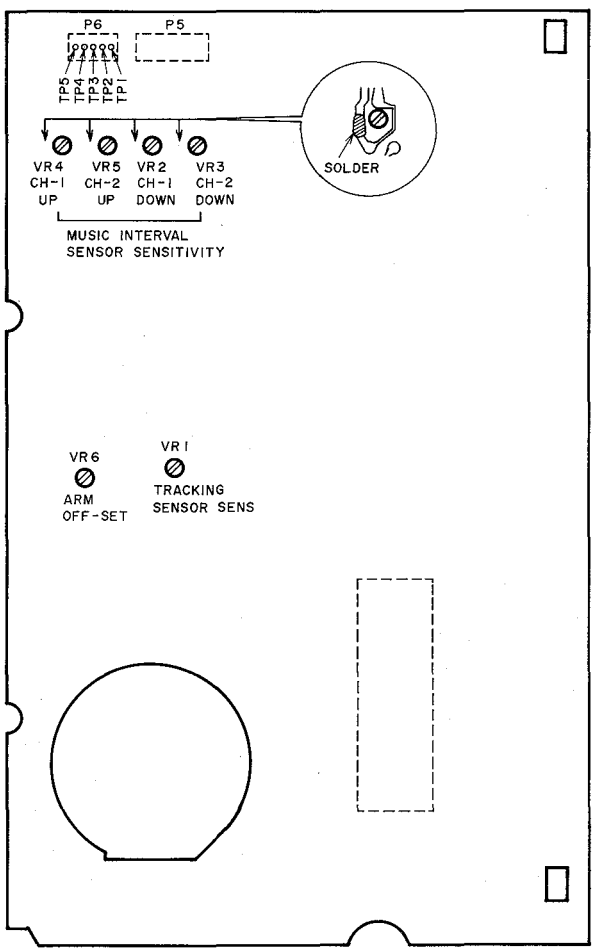


Fig. 5-2

5-3. ARM OFFSET VOLTAGE ADJUSTMENT (Refer to Fig. 5-2)

1) Disconnect the connector P5 on syscon PC BOARD.
2) Connect an oscilloscope or a digital voltmeter to TP3, on syscon PC BOARD.
3) Turn the power "ON" and adjust VR6 so that the voltage is 0V ±50mV.

5-4. TRACKING SENSOR SENSITIVITY ADJUSTMENT (Refer to Fig. 5-2)

1) Place a 30cm record on the platter and put the power "ON".
2) Connect an oscilloscope or a digital voltmeter to the TP5 on syscon PC BOARD.
3) Press the "ARM-FF-KEY" (◄◄), shift the tone arm and bring the arm down by pressing the "CUE" key. At this stage, fix the arm with a cello-phanetape to avoid setting down to its rest position.
4) Adjust VR1 so that the DC voltage is 0V ±0.1V.

5-5. MUSIC INTERVAL SENSOR SENSITIVITY ADJUSTMENT (Refer to Fig. 5-2)

1) Place the 30cm record on the platter and put the power "ON".
2) Connect an oscilloscope or a digital voltmeter to TP2 on syscon PC BOARD.
3) Press the ARM-FF key (◄◄), shift the tone arm to the Lead-out area on the record.
4) Adjust VR4 so that the DC voltage at TP2 is 0.95± 0.05V when the tone arm is on the "UP" position.
5) As in the previous steps, adjust the VR5 so that the DC voltage at TP1 is 0.95V ±0.05V.
6) Bring "DOWN" the tone arm to Lead-out area on the record. Adjust the VR2 so that the DC voltage at TP2 is 2.2V ±0.1V.
7) As same as in section 6, adjust the VR3 so that the DC voltage at TP1 is 2.2V ±0.1V.

NOTE: When the sensitivity adjustments (VR2 to 5) are difficult due to DC voltages are very low, cut the pattern by removed solder as shown in Fig. 5-2.

5-6. SPEED ADJUSTMENT (Refer to Fig. 5-3)

1) Set the test record (33-1/3rpm at 1000Hz) on the platter.
2) Turn "ON" the power and set the speed selector to 33rpm.
3) Play back the test record (33-1/3rpm 1000Hz). The playback output frequency is adjusted to 995Hz± 5Hz on the VR1 of MAIN MOTOR PC BOARD.
4) Set the speed selector to 45rpm. The playback output frequency is adjusted to 1343Hz ±5Hz on the VR2.

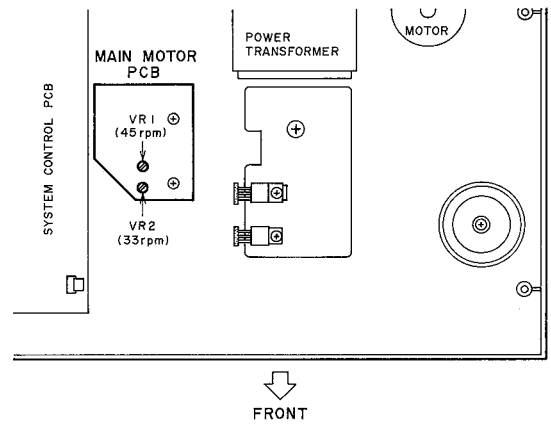


Fig. 5-3 Bottom View

5-7. LEAD-IN POSITION ADJUSTMENT (Refer to Fig. 5-4)

1) Set the 17cm record on the platter.
2) Turn "ON" the power and set the speed selector to "AUTO".
3) Press the "START/CUT" button. Confirm the position where the stylus descends.
4) In case the lead-in position is incorrect, it can be adjusted by turning the lead-in position adjuster in Fig. 5-4.
   Clockwise direction: The needle's landing point is distant from the spindle.
   Counter-clockwise direction: The needle's landing point is near the spindle.

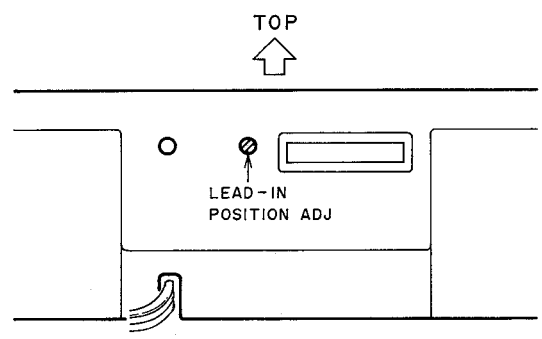


Fig. 5-4 Rear View

VI P.C BOARD TITLES AND IDENTIFICATION NUMBERS

PC BOARD TITLE		PC BOARD NUMBER	REMARKS
SYSTEM CONTROL	PC BOARD	P1041A501A	
SWITCH (A)	PC BOARD	P1041A501B	
SWITCH (B)	PC BOARD	P1041A501C	
POWER	PC BOARD	P1041A501D	
ARM POSITION SENSOR (TR)	PC BOARD	P1041A501F	
ARM POSITION SENSOR (LED)	PC BOARD	P1041A501G	
MOVING BASE	PC BOARD	P1041A501K	
TRACKING SENSOR	PC BOARD	P1041A501L	
ARM MOTOR	PC BOARD	P1041A501M	
TRANSISTOR	PC BOARD	P1041A501N	
IC	PC BOARD	P1041A501P	
SIZE SENSOR	PC BOARD	P1041D5030	
SENSOR	PC BOARD	P1041C5020	
SPEED	PC BOARD	P1041A501E	[J] only
MAIN MOTOR	PC BOARD	–	

SECTION 2

PARTS LIST

TABLE OF CONTENTS

RECOMMENDED SPARE PARTS 13
1. PC BOARD BLOCK 14
2. SYSTEM CONTROL PC BOARD 14
3. SWITCH (A) PC BOARD 14
4. SWITCH (B) PC BOARD 14
5. IC PC BOARD 15
6. ARM POSITION SENSOR (TR) PC BOARD 15
7. ARM POSITION SENSOR (LED) PC BOARD 15
8. TRACKING SENSOR PC BOARD 15
9. ARM MOTOR PC BOARD 15
10. TRANSISTOR PC BOARD 15
11. MAIN MOTOR PC BOARD 15
12. SPEED PC BOARD (J ONLY) 15
13. SENSOR PC BOARD 15
14. POWER PC BOARD 15
15. ASSEMBLY BLOCK 17
16. FINAL ASSEMBLY BLOCK 19
INDEX 20

Resistor and Capacitor which is not listed in this parts list, please refer to COMMON LIST FOR SERVICE PARTS.

ATTENTION

1. When placing an order for parts, be sure to list the parts no. model no., and description of each part. If any of this information is omitted, there are instances in which parts cannot be shipped or the wrong parts will be delivered.
2. Please be careful not to make a mistake in the parts no. If the parts no. is in error, a part different from the one ordered may be delivered.
3. Because part numbers and part definitions and supply in the Preliminary Parts List may have been the subject of changes, please use this parts list for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List shows those parts which are considered necessary for repairs. Other parts, such as resistors and capacitors, are shown in the "Common List for Service Parts" from which these parts should be selected and parts.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the parts list
   a) Mechanism Block

2. HEAD BASE BLOCK

REF. NO.	PART NO.	DESCRIPTION
2-1x	BH-T2023A320A	HEAD BASE BLOCK GX-F66R
2-2	HP-H2206A010A	HEAD R/P PR4-8FU C
2-3	ZS-477876	PAN20×03STL CMT
2-4	ZS-536488	BID20×08STL CMT
2-5	ZG-402895	CS ANGLE ADJUST SPRING

SP (Service Parts) Classification

A small "x" indicates the inability to show that particular part in the Photo or Illustration.

This number corresponds with the individual parts index number in that figure

This number corresponds with the Figure Number

   b) P.C Board Block

6. SYS. CON. P C BOARD BLOCK

REF. NO.	PART NO.	DESCRIPTION
6-1	BA-T2034A070A	PC SYS CON BLK GX-F44R
6-IC1	EI-324536	IC HD14049BP
6-IC2	EI-336801	IC MB8841-564M
6-IC3	EI-331661	IC SN7405N
6-IC4	EI-336725	IC M54527P
6-TR1to4	ET-200985	TR 2SC2603 F,G
6-TR5to28	ET-554657	TR 2SA733A P,Q
6-D1	ED-318292	D SILICON H 1S2473T-77 T26
6-D2to4	ED-308952	D GERMA V 1K34A-LR F07
6-D5to10	ED-318292	D SILICON H 1S2473T-77 T26
6-X1	EI-318384	OSC X'TAL NC-18C 3.579545MHZ

SP (Service Parts) Classification

These reference symbols correspond with component symbols in the Schematic Diagrams.

5. The kind of part and its installation position can both be determined by the Part Number. To determine where a part number is listed, utilize the Parts Index at the end of the Parts List. It is necessary first of all to find the Part Number. This can be accomplished by using the Reference Number listed at the right of the part number in the Parts Index.

WARNING

⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS

AVERTISSEMENT

⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

RECOMMENDED SPARE PARTS

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

REF. NO.		PART NO.	DESCRIPTION
1	N	BM-P1041A030A	⚠ MOTOR MAIN BLK AP-M50-C (U) [U,C,A,E,V,B,S]
2	N	BM-P1041A030B	⚠ MOTOR MAIN BLK AP-M50-C (J) [J]
3	N	BM-349296	MOTOR MMN-5C2RG
4	N	BT-354976	⚠ TRANS POWER APT-1041-70 [U]
5		BT-337905	⚠ TRANS POWER APT-5-10 [J]
6		BT-347082	⚠ TRANS POWER APT-5-20 [A]
7		BT-337906	⚠ TRANS POWER APT-5-30 [C]
8		BT-337907	⚠ TRANS PWOER APT-5-40 [E,V]
9		BT-337908	⚠ TRANS POWER APT-5-50 [B,S]
10		ED-349756	D LED SLR902A INFRARED
11		ED-344280	D SILICON H GMA-01-FY2 F05
12		ED-347123	D SILICON H GMA-01-FY1 F05
13		ED-306724	D SILICON S5277B 100/1.0A
14		ED-322238	D SILICON 1B4B41 100/1.0A
15		ED-338125	D ZENER H 05Z11 X
16	N	ED-357646	D ZENER H 05Z3.9 Z
17		EF-300601	⚠ FUSE FST3100 T 250V 0.50A [E,V,B,S]
18		EI-357879	IC LA5512
19	N	EI-355009	IC LA6458DF
20		EI-336761	IC LA6458S
21		EI-337903	IC LC4016B
22	N	EI-358499	IC P1041B-566
23		EI-344461	IC TA75393S
24		EI-315243	CI TA78005AP
25		EI-337017	OSC CE CSB800A 0.800000MHz
26		EM-351174	IND LE SL-4179
27		EP-351177	SOLENOID 0531PLT 12V
28		ER-307565	⚠ R FUSE ERD2FC S10 1/4W 6R8J
29		ES-337898	⚠ SW SLIDE 00120163 01-2 [U]
30		ES-336814	SW LEAF MSW-1150NBK 01-1 N0
31		ES-349276	SW SLIDE 00230873 2-02-03S
32		ES-352307	SW SLIDE 00230904 2-02-03S
33		ES-349367	SW TACT SKHHAB044A
34		ET-344472	PHOTO SENSOR 0N1128AK
35		ET-349755	PHOTO SENSOR SPS103
36		ET-308867	TR 2SA1015 O,Y
37		ET-347738	TR 2SA1282A E,F
38		ET-322598	TR 2SB632K E,F
39		ET-330225	TR 2SC1815 BL
40		ET-349272	TR 2SC3242A E,F
41		ET-338565	T R 2SD1302 R,S
42		ET-355153	TR 2SD1406 O,Y
43		EV-336853	R S-FIX H KVSF807U 3P 103
44		EV-336854	R S-FIX H KVSF807U 3P 104
45		EV-336847	R S-FIX H KVSF807U 3P 502
46	N	EV-354979	R S-FIX H V8EK-PV 3P 103
47	N	EV-355120	R S-FIX H V8EK-PV 3P 104
48	N	MB-355119	BELT EP
49		MB-344538	BELT 1.2XD26.0 CRHS60
50		MI-349224	GEAR TRACKING
51		MI-B349223	GEAR WARM PART

"NOTE" N: New Parts

SYMBOL FOR DESTINATION

- [A] : AAL (USA)
- [B] : UK (England)
- [C] : CSA (Canada)
- [E] : CEE (Europe)
- [J] : JPN (Japan)
- [S] : SAA (Australia)
- [U] : U/T (Universal Area)
- [V] : VDE (West Germany)

1. PC BOARD BLOCK

REF. NO.	PART NO.	DESCRIPTION
1-1A	BA-P1041A020A	PC SYSCON BLK AP-M50-C (U) [U]
1-1B	BA-P1041A020B	PC SYSCON BLK AP-M50-C (C) [C]
1-1C	BA-P1041A020C	PC SYSCON BLK AP-M50-C (A) [A]
1-1D	BA-P1041A020D	PC SYSCON BLK AP-M50-C (E) [E,V,B,S]
1-1E	BA-P1041A020J	PC SYSCON BLK AP-M50-C (J) [J]
1-1F	BA-P1041A020E	PC SYSCON BLK AP-M50-CB (U) [U]
1-1G	BA-P1041A020F	PC SYSCON BLK AP-M50-CB (C) [C]
1-1H	BA-P1041A020G	PC SYSCON BLK AP-M50-CB (A) [A]
1-1I	BA-P1041A020H	PC SYSCON BLK AP-M50-CB(E) [E,V,B,S]
1-1J	BA-P1041A020K	PC SYSCON BLK AP-M50-CB (J) [J]

NOTE:

PC SYSCON BLK consists of following PC BOARDS.

- SYSTEM CONTROL PC BOARD
- SWITCH (A) PC BOARD
- SWITCH (B) PC BOARD
- IC PC BOARD
- ARM POSITION SENSOR (TR) PC BOARD
- ARM POSITION SENSOR (LED) PC BOARD
- TRACKING SENSOR PC BOARD
- ARM MOTOR PC BOARD
- TRANSISTOR PC BOARD
- SPEED PC BOARD (J ONLY)
- SENSOR PC BOARD
- POWER PC BOARD

2. SYSTEM CONTROL PC BOARD

REF. NO.	PART NO.	DESCRIPTION
2-IC1	EI-336761	⚠ IC LA6458S
2-IC2	EI-355009	IC LA6458DF
2-IC3	EI-344461	IC TA75393S
2-IC4	EI-358499	IC P1041B-566
2-TR1	ET-308867	⚠ TR 2SA1015 O,Y,GR
2-TR2	ET-349272	TR 2SC3242A E,F
2-TR3	ET-347738	TR 2SA1282A E,F
2-TR4,5	ET-308867	TR 2SA1015 O,Y,GR
2-TR6 to 10	ET-338565	TR 2SD1302 R,S
2-TR11	ET-330225	TR 2SC1815 BL
2-TR12,13	ET-338565	TR 2SD1302 R,S
2-TR14,15	ET-330225	TR 2SC1815 BL
2-TR16	ET-347738	TR 2SA1282A E,F
2-TR17	ET-349272	TR 2SC3242A E,F
2-TR18	ET-308867	TR 2SA1015 O,Y,GR
2-TR19	ET-330225	TR 2SC1815 BL
2-TR20	ET-338565	TR 2SD1302 R,S [U,C,A,E,V,B,S]
2-TR21	ET-349272	TR 2SC3242A E,F
2-TR22	ET-330225	TR 2SC1815 BL
2-TR23	ET-322598	⚠ TR 2SB632K E,F
2-TR510	ET-330225	TR 2SC1815 BL
2-D1 to 4	ED-347123	D SILICON H GMA01-FY1 F05
2-D5	ED-357646	D ZENER H 05Z3.9 Z
2-D6,7	ED-347123	D SILICON H GMA01-FY1 F05
2-D8,9	ED-306724	D SILICON S5277B 100/1.0A [E,V]
2-D10,11	ED-338125	⚠ D ZENER H 05Z11 X
2-D12	ED-322238	⚠ D SILICON 1B4B41 100/1.0A
2-D14	ED-347123	D SILICON H GMA01-FY1 F05
2-D15	ED-344280	D SILICON H GMA-01-FY2 F05
2-SW1	ES-352307	SW SLIDE 00230904 2-02-03S
2-SW1B	ES-349276	SW SLIDE 00230873 2-02-03S [BLACK]
2-SW2	ES-352307	SW SLIDE 00230904 2-02-03S
2-SW2B	ES-349276	SW SLIDE 00230873 2-02-03S [BLACK]
2-VR1	EV-354979	R S-FIX H V8EK-PV 3P 103
2-VR2,3	EV-336854	R S-FIX H KVSF807U 3P 104
2-VR4,5	EV-355120	R S-FIX H V8EK-PV 3P 104
2-VR6	EV-336853	R S-FIX H KVSF807U 3P 103
2-L1	EO-345922	COIL FIX 1 LAL03KH 470K
2-X1	EI-337017	OSC CE CSB800A 0.800000MHz
2-IB1	EH-354968	COMP R EXB-P89 223K
2-FR1	ER-307565	⚠ R FUSE ERD2FC S10 1/4W 6R8J
2-R82	ER-320538	⚠ R OMF H S15 FS 1W 391J
2-R119	ER-333013	⚠ R OMF H SNP FS 2W 3R9J
2-C30,31	EC-336875	C EC V CUT SR 102M 25DC

3. SWITCH (A) PC BOARD

REF. NO.	PART NO.	DESCRIPTION
3-IND1	EM-351174	IND LE SL-4179
3-SW101 to 104	ES-349367	SW TACT SKHHAB044A
3-1	SZ-354921	CHASSIS OPERATION (B)

4. SWITCH (B) PC BOARD

REF. NO.	PART NO.	DESCRIPTION
4-SW201 to 209	ES-349367	SW TACT SKHHAB044A
4-1	SZ-B354922	CHASSIS OPERATION (A) PART

5. IC PC BOARD

REF. NO.	PART NO.	DESCRIPTION
5-IC201	EI-315243	IC TA78005AP

6. ARM POSITION SENSOR (TR) PC BOARD

REF. NO.	PART NO.	DESCRIPTION
6-PH1,2	ET-349755	PHOTO SENSOR SPS103
6-1	MZ-B344535	HOLDER POSITION SENSOR PART

7. ARM POSITION SENSOR (LED) PC BOARD

REF. NO.	PART NO.	DESCRIPTION
7-D101	ED-349756	D LED SLR902A INFRARED

8. TRACKING SENSOR PC BOARD

REF. NO.	PART NO.	DESCRIPTION
8-PH101	ET-344472	PHOTO SENSOR 0N1128AK

9. ARM MOTOR PC BOARD

REF. NO.	PART NO.	DESCRIPTION
9-C201	EC-341878	C EC V F05 NP 04W 100W 25.0DC

10. TRANSISTOR PC BOARD

REF. NO.	PART NO.	DESCRIPTION
10-TR201	ET-355153	TR 2SD1406 O,Y

11. MAIN MOTOR PC BOARD

REF. NO.	PART NO.	DESCRIPTION
11-IC	EI-357879	IC LA5512

12. SPEED PC BOARD (J ONLY)

REF. NO.	PART NO.	DESCRIPTION
12-IC101	EI-337903	IC LC4016B
12-TR101	ET-330225	TR 2SC1815 BL
12-VR101	EV-336847	R S-FIX H KVSF807U 3P 502
12-VR102	EV-336853	R S-FIX H KVSF807U 3P 103
12-VR103	EV-336853	R S-FIX H KVSF807U 3P 103
12-VR104	EV-336853	R S-FIX H KVSF807U 3P 103

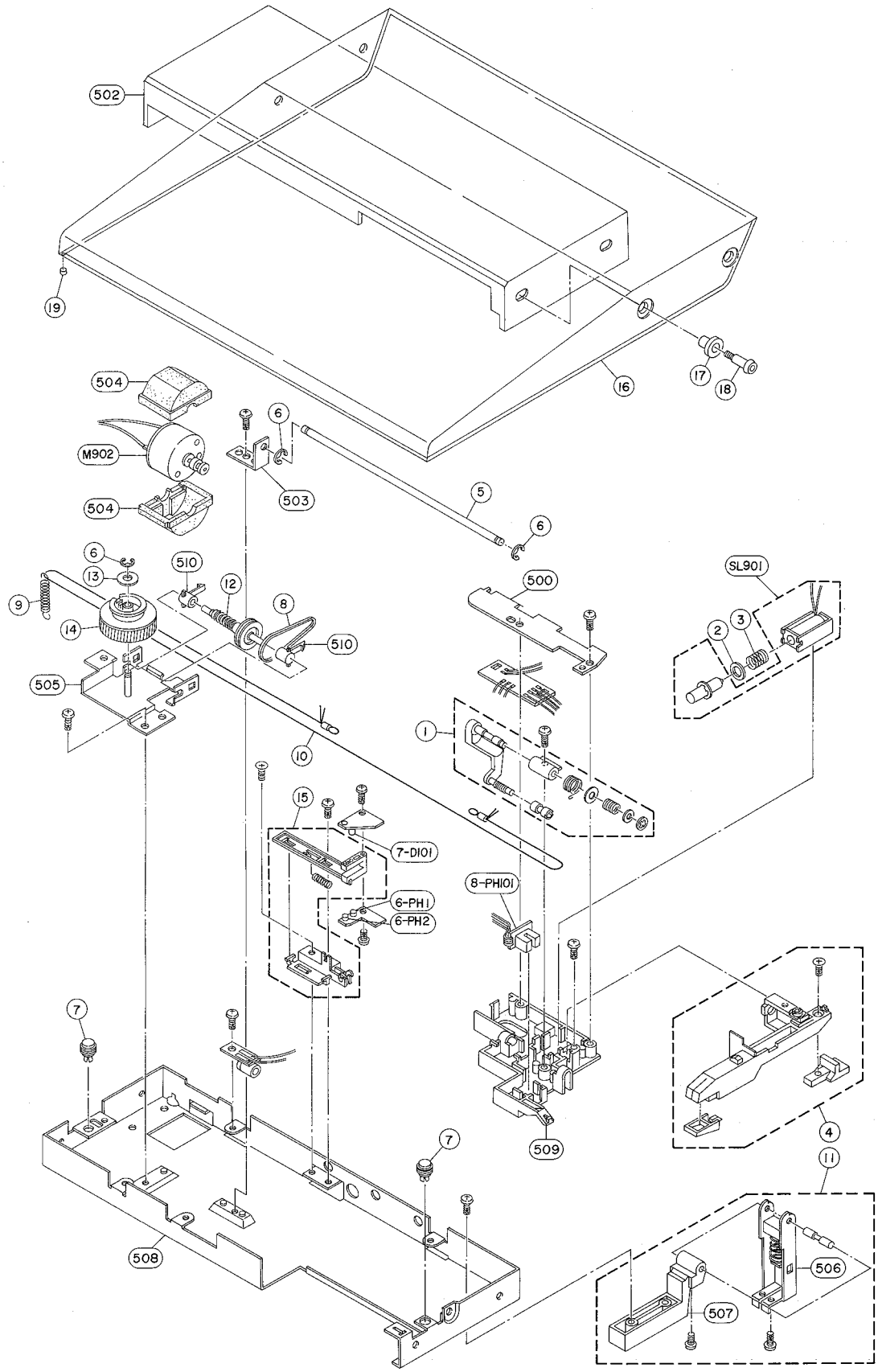
13. SENSOR PC BOARD

REF. NO.	PART NO.	DESCRIPTION
13-TR501	ET-325501	TR 2SA1015O, Y
13-TR502 to 504	ET-330225	TR 2SC1815 BL
13-TR505	ET-325501	TR 2SA1015 O,Y

14. POWER PC BOARD

REF. NO.	PART NO.	DESCRIPTION
14-SW301	ES-337898	⚠ SW SLIDE 00120163 01-2 [U]

ASSEMBLY BLOCK

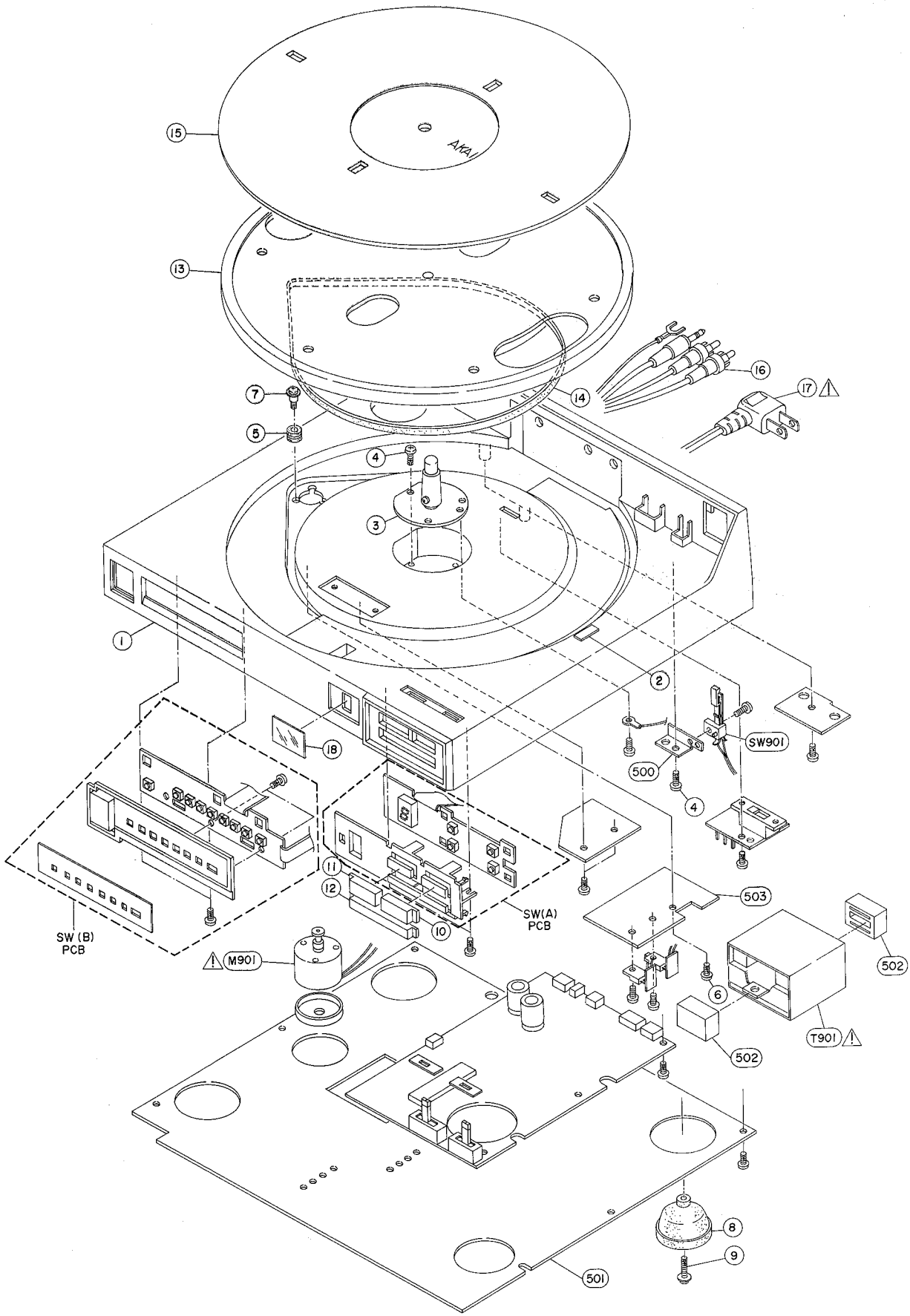


15. ASSEMBLY BLOCK

REF. NO.	PART NO.	DESCRIPTION
15-1	TP-P1041A130A	LIFTER BLK AP-M50-C
15-2	ZW-288764	PW51X078X020PBR
15-3	ZG-354975	SP PUSH PLUNGER
1-54A	TP-355022	TONE ARM W/C AP-M50 DOUBLE SPEED [J]
15-4B	TP-354989	TONE ARM W/C AP-M50 [U,C,A,E,V,B,S]
15-5	MS-354910	GUIDE RAIL
15-6	ZW-270101	RING E300SUP CMT
15-7	MR-308836	PULLEY
15-8	MB-344538	BELT 1.2X026.0C RHS60
15-9	ZG-357752	SP T5-04.0/0.40-16.0 T5-111
15-10	EZ-349232	STRING WIRE
15-11	TP-P1041A110A	HINGE BLK AP-M50-C
15-12	MI-B349223	GEAR WARM PART
15-13	ZW-659755	PW43X110X050NYL
15-14	MI-349224	GEAR TRACKING
15-15	MZ-B344535	HOLDER POSITION SENSOR PART
15-16	BC-B349261D	DUST COVER PART AP-M50-B
15-17	EZ-349251	BUSH COVER
15-18	ZS-349252	SCREW
15-19	MB-343057	COVER CUSHION
15-SL901	EP-351177	SOLENOID 0531PLT 12V
15-M902	BM-349296	MOTOR MMN-5C2RG
6-PH1,2	ET-349755	PHOTO SENSOR SPS103
7-D101	ED-349756	D LED SLR902A INFRARED
8-PH101	ET-344472	PHOTO SENSOR 0N1128AK

NOTE:
Parts listed in 1 to PH101 on the exploded view and list are normaly stocked for replacement purpose. The remaining parts shown in this manual are not normaly stocked, because they are seldom requird for routine service.

FINAL ASSEMBLY BLOCK



16. FINAL ASSEMBLY BLOCK

REF. NO.	PART NO.	DESCRIPTION
16-1	BC-355024	CABINET (1)
16-1B	BC-355024B	CABINET (1)-B
16-2	SZ-355110	SHEET REFLECTION STOP
16-3	TP-349346	SPINDLE ASSY
16-4	ZS-310984	PT BR30X08STL CMT
16-5	MB-345351	RUBBER CUSHION
16-6	ZS-345062	PT BR40X10STL CMT
16-7	ZS-350767	SCREW
16-8	SA-336281B	INSULATOR (B)
16-9	ZS-353104	BT PAN30X18STL CMT C
16-10	SK-354915A	KNOB (1) START/CUT
16-10B	SK-354915C	KNOB (1) START/CUT-B
16-11	SK-354915B	KNOB (1) CUE
16-11B	SK-354915D	KNOB (1) CUE-B
16-12	SK-354916	KNOB (2)
16-12B	SK-354916B	KNOB (2)-B
16-13	TP-348321C	PLATTER (C)
16-14	MB-355119	BELT EP
16-15A	TP-354919A	TABLE SHEET (A) [U,J,C,E, V,B,S]
16-15B	TP-354919B	TABLE SHEET (B) [A]
16-16A	EW-354977	CORD 3P AUDIO [U,J,C,E,V, B,S]
16-16B	EW-354978	CORD UL 3P AUDIO [A]
16-17A	EW-349551	⚠ AC CORD 2 CORES KP-224, VFF PL-3 J [J]
16-17B	EW-349552	⚠ AC CORD 2 CORES KP-224, VFF PL-3 U/T [U]
16-17C	EW-207742	⚠ AC CORD 2 CORES VM-0238, SPT-1 UC [C,A]
16-17D	EW-336923	⚠ AC CORD 2 CORES KP-419C, LTCE-2F EV [E,V]
16-17E	EW-347023	⚠ AC CORD LTBS-2F 42/ 0.15X2 B [B]
16-17F	EW-336924	⚠ AC CORD 2 CORES KP-560, LTSA-2F S [S]
16-18	SE-354917B	WINDOW FLD-B
16-19	SZ-354921	CHASSIS OPERATION (B)
16-20	SZ-B354922	CHASSIS OPERATION (A) PART
16-21x	AX-332567D	45 ADAPTOR-B
16-T901A	BT-337905	⚠ TRANS POWER APT-5-10 [J]
16-T901B	BT-354976	⚠ TRANS POWER APT-1041-70 [U]
16-T901C	BT-337906	⚠ TRANS POWER APT-5-30 [C]
16-T901D	BT-347082	⚠ TRANS POWER APT-5-20 [A]
16-T901E	BT-337907	⚠ TRANS POWER APT-5-40 [E,V]
16-T901F	BT-337908	⚠ TRANS POWER ATP-5-50 [B,S]
16-F1,2	EF-300601	⚠ FUSE FST3100 T 250V 0.50A [E,V,B,S]
16-M901A	BM-P1041A030B	⚠ MOTOR MAIN BLK AP-M50-C (J) [J]
16-M901B	BM-P1041A030A	⚠ MOTOR MAIN BLK AP-M50-C (U) [U,C,A,E,V,B,S]
16-SW901	ES-336814	SW LEAF MSW-1150NBK D1-1 NO

SYMBOL FOR COLOR VARIATION

NON : STANDARD COLOR

B or BL : BLACK

NOTE:

Parts listed in 1 to SW901 on the exploded view and list are normaly stocked for replacement purpose. The remaining parts shown in this manual are not normaly stocked, because they are not seldom requird for routine service.

INDEX

PART NO.	REF. NO.
AX-332567D	16-21x
BA-P1041A020A	1-1A
BA-P1041A020B	1-1B
BA-P1041A020C	1-1C
BA-P1041A020D	1-1D
BA-P1041A020E	1-1F
BA-P1041A020F	1-1G
BA-P1041A020G	1-1H
BA-P1041A020H	1-1I
BA-P1041A020J	1-1E
BA-P1041A020K	1-1J
BC-B349261D	15-16
BC-355024	16-1
BC-355024B	16-1B
BM-P1041A030A	16-M901B
BM-P1041A030B	16-M901A
BM-349296	15-M902
BT-337905	16-T901A
BT-337906	16-T901C
BT-337907	16-T901E
BT-337908	16-T901F
BT-347082	16-T901D
BT-354976	16-T901B
EC-336875	2-C30
EC-336875	2-C31
EC-341878	9-C201
ED-306724	2-D8
ED-306724	2-D9
ED-322238	2-D12
ED-338125	2-D10
ED-338125	2-D11
ED-344280	2-D15
ED-347123	2-D1 to 4
ED-347123	2-D6
ED-347123	2-D7
ED-347123	2-D14
ED-349756	7-D101
ED-349756	7-D101
ED-357646	2-D5
EF-300601	16-F1
EF-300601	16-F2
EH-354968	2-IB1
EI-315243	5-IC201
EI-336761	2-IC1
EI-337017	2-X1
EI-337903	12-IC101
EI-344461	2-IC3
EI-355009	2-IC2
EI-357879	11-IC
EI-358499	2-IC4
EM-351174	3-IND1
EO-345922	2-L1
EP-351177	15-SL901
ER-307565	2-FR1
ER-320538	2-R82
ER-333013	2-R119
ES-336814	16-SW901
ES-337898	14-SW301
ES-349276	2-SW1B
ES-349276	2-SW2B
ES-349367	3-SW101 to 104
ES-349367	4-SW201 to 209
ES-352307	2-SW1
ES-352307	2-SW2
ET-308867	2-TR1
ET-308867	2-TR4
ET-308867	2-TR5
ET-308867	2-TR18
ET-322598	2-TR23
ET-325501	13-TR501
ET-325501	13-TR505
ET-330225	2-TR11
ET-330225	2-TR14
ET-330225	2-TR15
ET-330225	2-TR19
ET-330225	2-TR22
ET-330225	2-TR510

PART NO.	REF NO.
ET-330225	12-TR101
ET-330225	13-TR502 to 504
ET-338565	2-TR6 to 10
ET-338565	2-TR12
ET-338565	2-TR13
ET-338565	2-TR20
ET-344472	8-PH101
ET-344472	8-PH101
ET-347738	2-TR3
ET-347738	2-TR16
ET-349272	2-TR2
ET-349272	2-TR17
ET-349272	2-TR21
ET-349755	6-PH1
ET-349755	6-PH2
ET-349755	6-PH1
ET-349755	6-PH2
ET-355153	10-TR201
EV-336847	12-VR101
EV-336853	2-VR6
EV-336853	12-VR102 to 104
EV-336854	2-VR2
EV-336854	2-VR3
EV-354979	2-VR1
EV-355120	2-VR4
EV-355120	2-VR5
EW-207742	16-17C
EW-336923	16-17D
EW-336924	16-17F
EW-347023	16-17E
EW-349551	16-17A
EW-349552	16-17B
EW-354977	16-16A
EW-354978	16-16B
EZ-349232	15-10
EZ-349251	15-17
MB-343057	15-19
MB-344538	15-8
MB-345351	16-5
MB-355119	16-14
MI-B349223	15-12
MI-349224	15-14
MR-308836	15-7
MS-354910	15-5
MZ-B344535	6-1
MZ-B344535	15-15
SA-336281B	16-8
SE-354917B	16-18
SK-354915A	16-10
SK-354915B	16-11
SK-354915C	16-10B
SK-354915D	16-11B
SK-354916	16-12
SK-354916B	16-12B
SZ-B354922	4-1
SZ-B354922	16-20
SZ-354921	3-1
SZ-354921	16-19
SZ-355110	16-2
TP-P1041A110A	15-11
TP-P1041A130A	15-1
TP-348321C	16-13
TP-349346	16-3
TP-354919A	16-15A
TP-354919B	16-15B
TP-354989	15-4B
TP-355022	15-4A
ZG-354975	15-3
ZG-357752	15-9
ZS-310984	16-4
ZS-345062	16-6
ZS-349252	15-18
ZS-350767	16-7
ZS-353104	16-9
ZW-270101	15-6
ZW-288764	15-2
ZW-659755	15-13

AKAI

MODEL AP-M50

SCHEMATIC DIAGRAM AND PC BOARDS

1. SCHEMATIC DIAGRAM 2
2. SYSTEM CONTROL PCB, SWITCH PCB 3
3. SPEED PCB, SENSOR PCB, SIZE PCB, ARM POSITION PCB, MOVING BASE PCB, IC PCB, TRANSISTOR PCB, TRACKING SENSOR PCB, ARM MOTOR PCB, POWER PCB, MAIN MOTOR PCB 4

AP - M50

SYSCON PCB P1041A501A

TRACKING SENSOR PCB P1041A501L

MOVING BASE PCB P1041A501K

ARM MOTOR PCB P1041A501M

ARM POSITION SENSOR(LED) PCB P1041A501G

ARM POSITION SENSOR(TR) PCB P1041A501F

SWITCH(B) PCB P1041A501C

SWITCH(A) PCB P1041A501B

POWER PCB P1041A501D

MAIN MOTOR PCB U,C,A,E,B,S MODELS

MAIN MOTOR PCB J MODEL

SPEED PCB P1041A501E

SENSOR PCB P1041C5020

SIZE SENSOR PCB P1041D5030

IC PCB P1041A501P

TRANSISTOR PCB P1041A501N

2SA1015 2SC1815 2SD1302

2SA966

2SA3242A

2SD1406

2SB632K

VOLTAGE MEASURED AT STOP MODE

: B電源 B(POWER SUPPLY) LINE

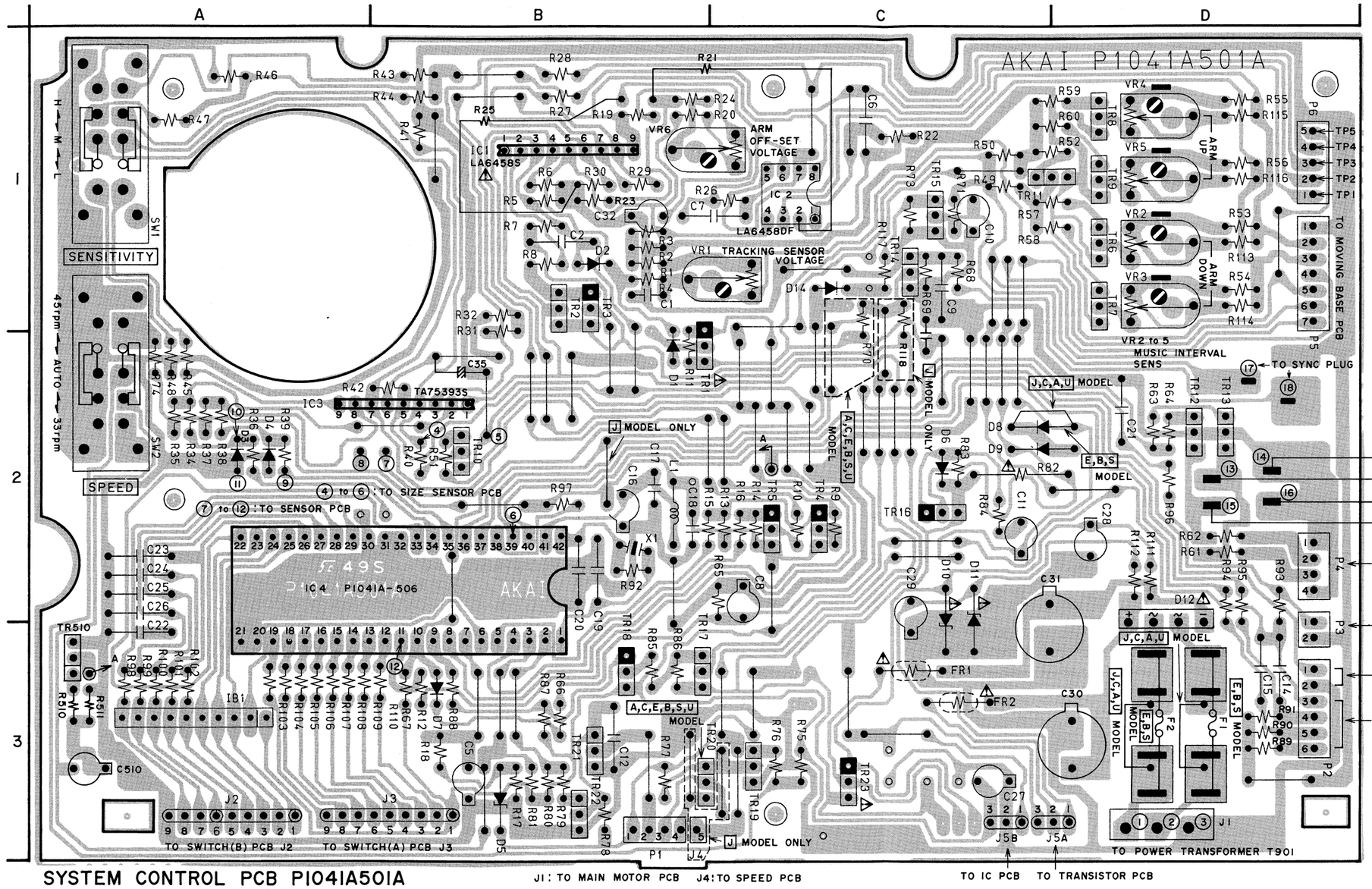
WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SURETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN μF 50WV(J)

備考
C,Rの単位(特に指定された部品以外)
抵抗……Ω1/6W(J)
コンデンサ……μF 50WV(J)

AP-M50 SCHEMATIC DIAGRAM NO. 850315A



SYSTEM CONTROL PCB P1041A501A

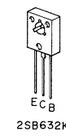
LOCATION OF COMPONENTS

TR'S		IC'S	
TR1	B2	IC1	B1
TR2,3	B1	IC2	C1
TR4,5	C2	IC3	B2
TR6 to 9	D1	IC4	A2
TR10	B2		
TR11	D1	CONNECTOR'S	
TR12,13	D2	P1	B3
TR14,15	C1	P2,3	D3
TR16	C2	P4	D2
TR17,18	B3	P5,6	D1
TR19	C3	J2	A3
TR20 to 22	B3	J3,4	B3
TR23	C3	J5	C3
TR510	A3	(1) to (3)	D3
		(4) to (7)	B2
		(8) to (11)	A2
		(12)	B3
		(13) to (18)	D2

B ● ● ● = NPN TRANSISTOR

B ■ ● ● = PNP TRANSISTOR

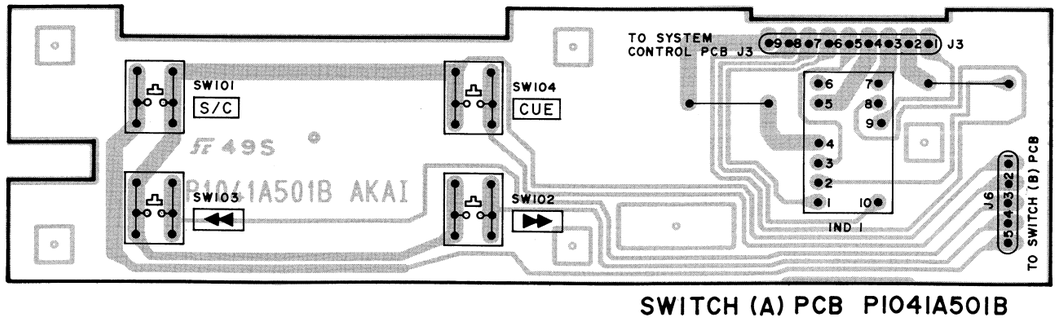
TR1,4,5,18	2SA1015(O,Y)
TR2,17,21	2SC3242A(E,F)
TR3,16	2SA966(O,Y)
TR6 to 10,12,13,20	2SD1302(R,S)
TR11,14,15,19,22	2SC1815(Y,GR)
TR23	2SB632K(D,E,F)



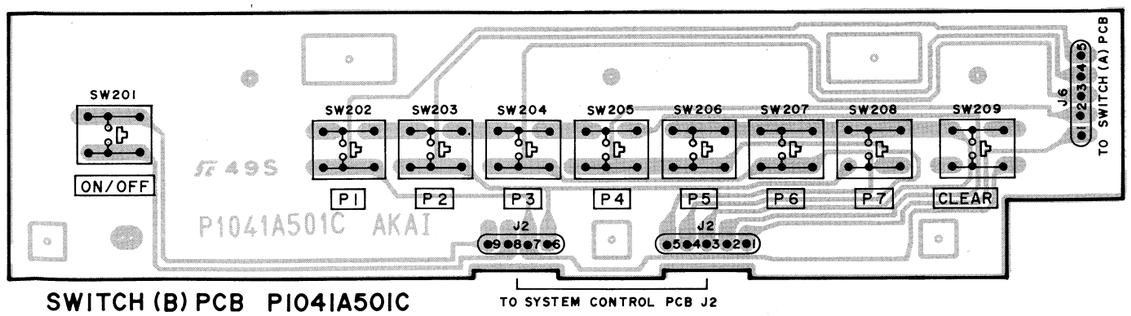
注意：△の付された部品は、安全上重要部品です。交換の際は、指定部品以外は使用しないこと。

WARNING: △INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT: △ IL INDIQU LES COMPOSANTS CRITIQUES DE SURETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.

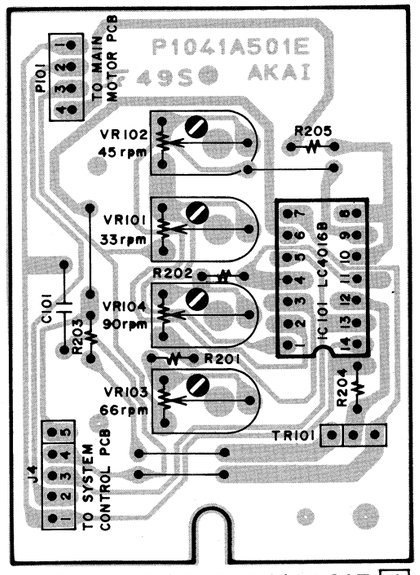


SWITCH (A) PCB P1041A501B

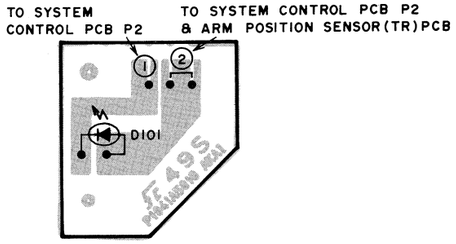


SWITCH (B) PCB P1041A501C

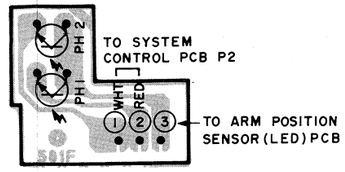
TO SYSTEM CONTROL PCB J2



SPEED PCB P1041A501E [J]

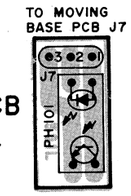


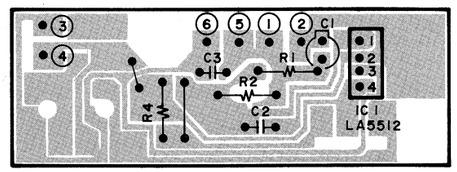
ARM POSITION SENSOR (LED) PCB P1041A501G



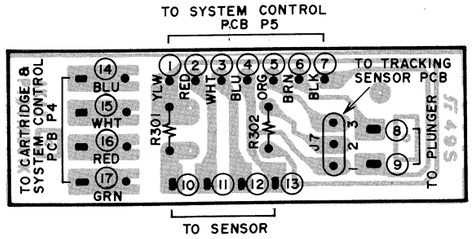
ARM POSITION SENSOR (TR) PCB P1041A501F

TRACKING SENSOR PCB P1041A501L

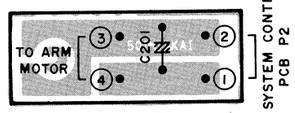




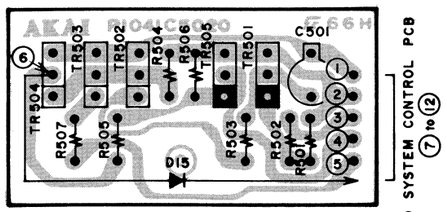
MAIN MOTOR PCB [J]



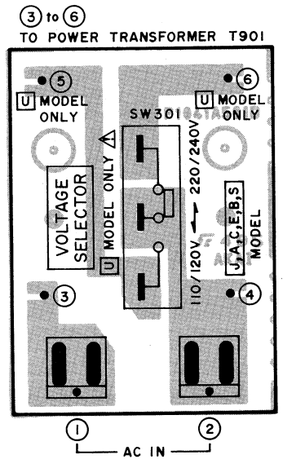
MOVING BASE PCB P1041A501K



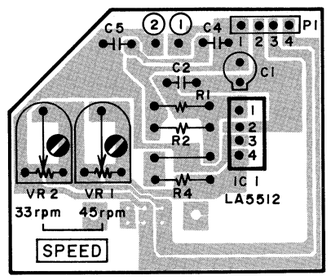
ARM MOTOR PCB P1041A501M



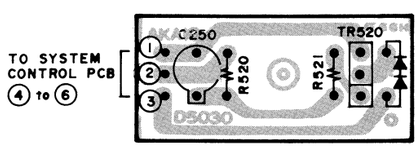
SENSOR PCB P1041C5020



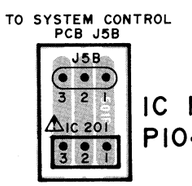
POWER PCB P1041A501D



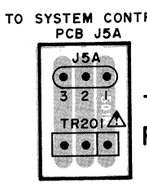
MAIN MOTOR PCB U,C,A,E,B,S



SIZE SENSOR PCB P1041D5030



IC PCB P1041A501P



TRANSISTOR PCB P1041A501N

注意：⚠の付された部品は、安全上重要部品です。交換の際は、指定部品以外は使用しないこと。

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT: ⚠ IL INDIQU LES COMPOSANTS CRITIQUES DE SURETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.